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POPULAR MECHANICS

An Illustrated Weekly Review of the Mechanical Press of the World

"Tells you how to do things." Written so you can understand it

Vol. 2. No. 26. CHICAGO, DECEMBER 27, 1902. PRICE 5 CENTS.

American Binder Where Carthage Once Stood

Our Machinery and Improved Methods Are Instilling New Life Into Ancient Localities that Have Laid Dormant for Centuries

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AMERICAN BINDER WHERE CARTHAGE STOOD.

Harvesting the Crops by Modern Methods on the Site of the Once Famous City.

For the first time in many centuries something modern has appeared on the site of the ancient city of Carthage. Here, where once flourished the arts of war and peace, is now but a vast solitudinous plain. Of the streets through which the conquering Hannibal marched in triumph amid the cheers of his countrymen nothing now remains but the shadeless wheat fields. Instead of the prancing war horse, the stalking camel plods along drawing the plow or cultivator. Instead of the triumphant warrior is seen the dark-skinned African, devoid of pride, spirit of self-reliance. The soil, though, is as rich as it was on the day when the Phoenicians founded the city, and the American and his reviving influences have found their way to the historic spot where the Romans wrought such devastation in their conquests. The illustration shows a modern American binder, made by the International Harvester Co., at work on the site of the city of Carthage, with Americans in charge of a gang of native workmen. The machine was a source of wonderment to the natives, who for generations have employed only the crudest of farm implements in harvesting and tilling the soil. The place is on the northern coast of Africa, about twelve miles from the present city of Tunis. American farm implements are now in general use here, and the market has been found a lucrative one.

LANTERN SLIDES.

In an address before the Buffalo Camera Club recently, John P. Zenner said:

Slide making originated in the United States, having been invented, as is claimed, by one Langheim, of Philadelphia, some fifty odd years ago. It at once became popular, and continued to fascinate, not only those directly interested in the production of the slides, but old and young, who simply wished to see pictures in an agreeable way.

The making of a good slide begins with the making of the negative, the operations in both cases being closely allied, and he who has mastered the first, which is the corner stone of all successful results in any branch of photography, may well be expected to be able to make a good lantern slide. A slide is judged, not by what it appears to be when held in the hand, but by its appearance when magnified two to five thousand times on the screen, where a small defect in the slide will show up as a gross fault. Patience and cleanliness are absolutely necessary. The greatest caution should be observed to keep the lantern plates free from dust, both before and after exposure and development, for small pin holes and dust spots, hardly noticeable on the slide, assume huge proportions on the screen, and detract materially from its beauty.

The high lights in a slide should in rare cases only be represented by clear glass, and the shadows should always be transparent, even in the deepest parts. The balance between these extremes should be a delicate gradation of tone from the one to the other. The contrast between the strongest high lights and the deepest shadow should be enough to give brilliancy without hardness, and delicacy or softness without being flat. This is controlled also to some extent by the subject, summer sunshine requiring a more vigorous rendering than hazy autumn effects, and herein each individual must decide for himself what is most necessary to give the correct portrayal of the subject. It is a good idea to procure a slide, as near technically perfect as possible, from some slide-making friend or dealer, and use it as a standard to judge your work by, and to make slide after slide from the same negative until a satisfactory result is reached.

BREATHING WELLS OF NEBRASKA.

"The Earth's Lungs"—A Strange Phenomena Discovered By the Geological Survey.

The earth's lungs seem to be located in Nebraska. There the United States geological survey has discovered a wonderful phenomena termed the breathing wells which are distributed throughout a large portion of the state. While a person breathes about once a second it takes the earth several days to give one breath through these wonderful nostrils or wells. There are periods when the wells blow out strong currents of air and periods of about equal length when they draw in the air.

The wells are of the driven type mostly in use on the plains. They are termed breathing, sighing, blowing or roaring wells according to their character in different places. It has been observed that blowing occurs with the change of the barometer. Some wells are found to be most audible when the wind is from the northwest, with a rise in water level; but with a change of wind, air is drawn in and the water is observed to sink. During the progress of a low barometer area over one of these regions, wind is violently expelled from the wells, with a noise distinctly audible for several rods. Profs. Loveland and Swezey, of the University of Nebraska, have found that the breathing periods in a well in Perkins county are exactly coincident with barometric changes. Various causes have been attributed to the phenomena. Some reason that the blowing is the liberation of gas produced from petroleum. Others think that it is due to a tidal action of sheet water existing in a great subteranean lake. Others say it is caused by atmospheric pressure. The action of the water on the materials through which the wells are driven is most generally ascribed as the cause.

BALLOONING FOR ANAEMICS.

Dr. Naugier, of Paris, in a paper read at a recent meeting of the Academie de Medicine, made astonishing claims as to the tonics and blood-forming effects of balloon ascensions, says the Aeronautical World. A two hours' voyage in the air, he declared, causes a marked increase in the number of the red corpuscles, and the condition persists for ten days after an ascension. Five such ascensions in the course of six or seven weeks, he said, are more beneficial to an anaemic than a sojourn of three months in the mountains. The good effect begins to be felt almost immediately, and a lengthened stay in the air is of no value, and in the case of many, is actually detrimental in causing nervous irritation.

Dr. Naugier urged that the municipal council be asked to provide a large balloon, capable of taking to the upper air daily fifty patients who are too poor to afford a change of climate.

BAGGAGE HANDLED BY ENDLESS BELTS.

A novel system of handling baggage is in operation at the new Paris station of the Orleans Ry. Co. The Railway Review says: The station is on two levels, the lower being reserved for the offices and storage space, and the upper for the passenger room, the difference of level being about 17 feet. The baggage is delivered by means of electrically-operated endless belts kept in constant motion. It is conveyed by the porters from the baggage cars to chutes which deliver it on to the conveying belts. From these it is carried first to a subway below the platform and from the extremity of this by an inclined belt to a platform, on the upper floor. All the baggage from the cars in any part of the train is thus conveyed to one spot, where there is a right and left shifting platform, on which the baggagemen can readily sort and hand over the luggage to the passengers as it is delivered.

San Francisco's New Ship Canal

New Outlet to Oakland Bay Will Make an Island of Alameda

By J. Mayne Baltimore.

The digging of the new ship canal on the Pacific coast from Oakland bay through the pininsula to San Leandro bay, which is now nearly completed, will create an island on which the city of Alameda will stand, and will prove of inestimable value as a harbor improvement to San Francisco bay. The work is being done by the United States government at a cost of $600,000, as a means of doing away with the necessity of dredging. For a number of years the government has been compelled to keep a large dredge in almost constant operation in the upper end of Oakland bay to keep the channel of sufficient depth for navigation. The inflow of tides ceaselessly deposited in the channel quantities of mud which the ebbing floods failed to sweep away. Filth of every description—the sewage of the cities, garbage and other foul accretions—was piled up at the head of the bay, and having no outlet, bottled up the harbor and rendered the waters malodorous and unhealthful. Often tons of small fish were cast up on the noisome tide flats, where they perished and decayed.

The new canal will obliterate all these objectionable conditions. By its opening an outlet will be given Oakland bay, through which the tides can sweep. As San Leandro bay opens out into the main San Francisco harbor, a complete circle will thus be formed by the canal. With the ebb and flow the waters will sweep through the channel with great force, and the tidal current will thoroughly flush out all that wide expanse of bay which has heretofore had no outlet.

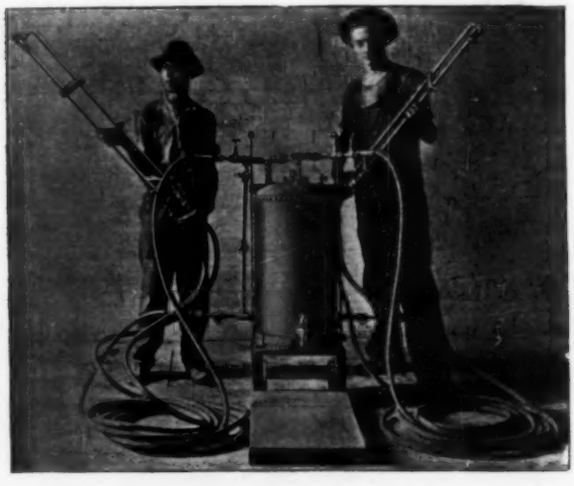
The canal will be more than two miles long; 400 feet wide at the top and 300 feet wide at the bottom. It will be about 16 feet deep at high tide and 8 feet at extreme low tide. Nearly 1,500,000 cubic feet of earth will be removed. The excavated earth is hauled by trains and dumped into the bay, and on the "made ground," thus formed, extensive railroad shops are to be built.

Canal as It Now Appears

The canal is spanned by four large draw bridges, two of which are railroad bridges and two for street cars and teams.

SPRAYS PAINT FROM HOSE.

The paint spraying machine, which consists of an air-pump and hose, and spreads the paint as a fine spray, has proved a wonderful saver of time and labor. It is used for painting cars, walls, overhead construction, etc. The coating is laid on uniformly, and by means of an extension rod, overhead construction may be easily painted without the need of scaffolding. It is claimed that the liquid permeates every crevice and joint thoroughly, and that one man can cover from 20,000 to 25,000 square feet of surface per day, against 1,000 square feet which is the average day's work of the old brush method of painting.



Paint Spraying Machine

LONG DISTANCE SWIMMING RECORD.

Long distance swimming, once such a popular sport as in the days when Lord Byron swam the Hellespont, is being revived. Not since Capt. Webb swam the English channel and Prof. Cavaill performed his wondrous feats has there been such interest in the healthful and useful exercise. Herbert Deutz, the 47-year-old Brooklyn swimmer, was one of the first to make a record this year. Montague Holbein soon afterward swam across the English channel. Last summer seven members of the United States Volunteer Life Saving Corps left Battery Park, N. Y., for Coney Island. Only one of the number finished the trip of 6½ miles amid currents and swells from vessels, but that does not discredit the other six. E. Carroll Schaeffer, the Philadelphia swimming champion, won the quarter mile and mile races at Travers Island recently, the course being 110 yards long, across a tidal salt water, that was very cold.

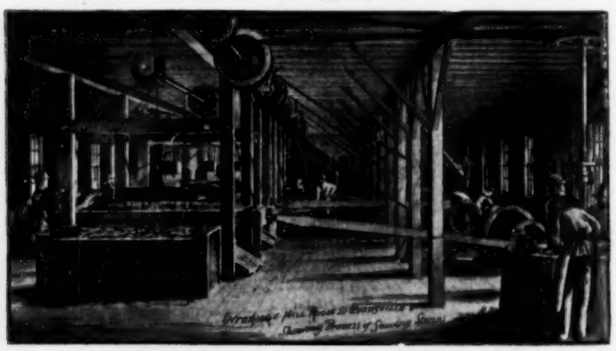
In preparing for a long distance swim, the swimmer trains to the hour as does the athlete for a contest on land. The body is covered with an oily substance, usually vaseline, and boats containing stimulants acocmpany each of the swimmers. At intervals he is given beef tea, tea and other liquids according to the directions of the trainer.

HOW SCYTHESTONES ARE MADE.

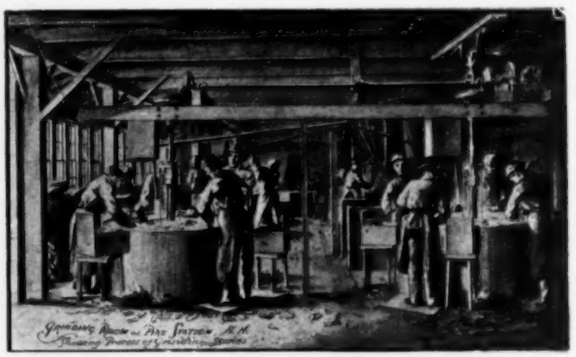
Like Oil Stones, the Best Rock for Their Manufacture Comes From the Ozarks.

By the Pike Company.

In the last issue we told of the two divisions of oil stones in general—the oil stone proper and the scythestone—and described the process of manufacturing oil stones. No less interesting is the method by which the scythestones are made.



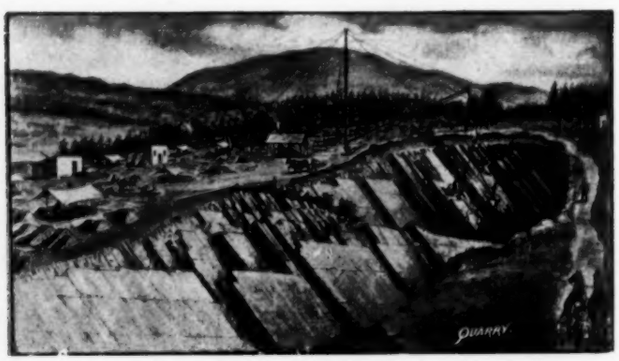
Mill Room Showing Process of Sawing Stones



Grinding Room Where Stones are Finally Shaped for the Market

The rock for scythestones is known as "quartzose mica schist," and, like that for the manufacture of oil stones, the best quality comes from the Ozark mountains in Arkansas. The rock is of laminated structure, the quartz crystals being fine, uniform and deposited in thin layers, intimately blended with fine particles of mica. It is the presence of this mica which renders the stone so free cutting, which is the important feature of this stone, and has given it a world-wide reputation.

The rock is in layers or sheets, which have been raised by the folding of the earth's surface in the vast upheavals of a pre-historic age to an angle of about sixty-five degrees. These layers split very readily, and the rock is taken out in large sheets, varying in thickness from six inches to two feet and from ten to twenty feet in length. These large sheets are split into thinner ones by means of wedges, and are then broken into slabs by the use of blade-pointed iron bars. These slabs are afterwards cut into small strips, about two inches wide and eleven inches long, by means of special hard-tempered marking knives and a special hammer, the stone breaking readily along



Where Oil Stones are Dug from the Earth Near Hot Springs

a marked line when the marking is parallel with the grain of the rock.

These strips are drawn from the quarry to the mill, where they are "ground," or rubbed, into oval shape on large iron wheels revolving horizontally, upon which sand and water are fed by an automatic sand feed. The illustration entitled "Grinding Room at Pike Station" shows this process. After being ground the stones are dried in racks, assorted, labeled and packed.

The stones taken from these quarries near Pike Station are known under the commercial names of Indian Pond (of which there are three qualities, Extra, No. 1 and No. 2) and White Mountain. The Indian Pond stones were made and sold under that name as far back as 1823. At that time paper labels were not known, and in order to distinguish this stone the ends were painted red; thus the Indian Pond stone came to be known as the Indian Pond Red End, and bears that name to this day, the ends still being painted as of old. For many years these stones were known generally by the simple term, "Red End" scythestones, but within recent years the cheaper scythestones, made of the refuse grindstone rock in the West, have been painted with red ends, so that the original name, Indian Pond Red End is now necessary to distinguish this stone from its imitators.

TOWN HEATED BY ELECTRICITY.

L'Electricien, Paris, tells how a winter health resort in Switzerland is about to be heated entirely by electricity which is generated at a waterfall some miles away. The population of the town is 3,000, besides about 2,500 patients. All the lighting, heating and cooking will be done by electricity to avoid all smoke and gases which might irritate the sick, most of whom have lung troubles. About 12,000 horse-power will be used.

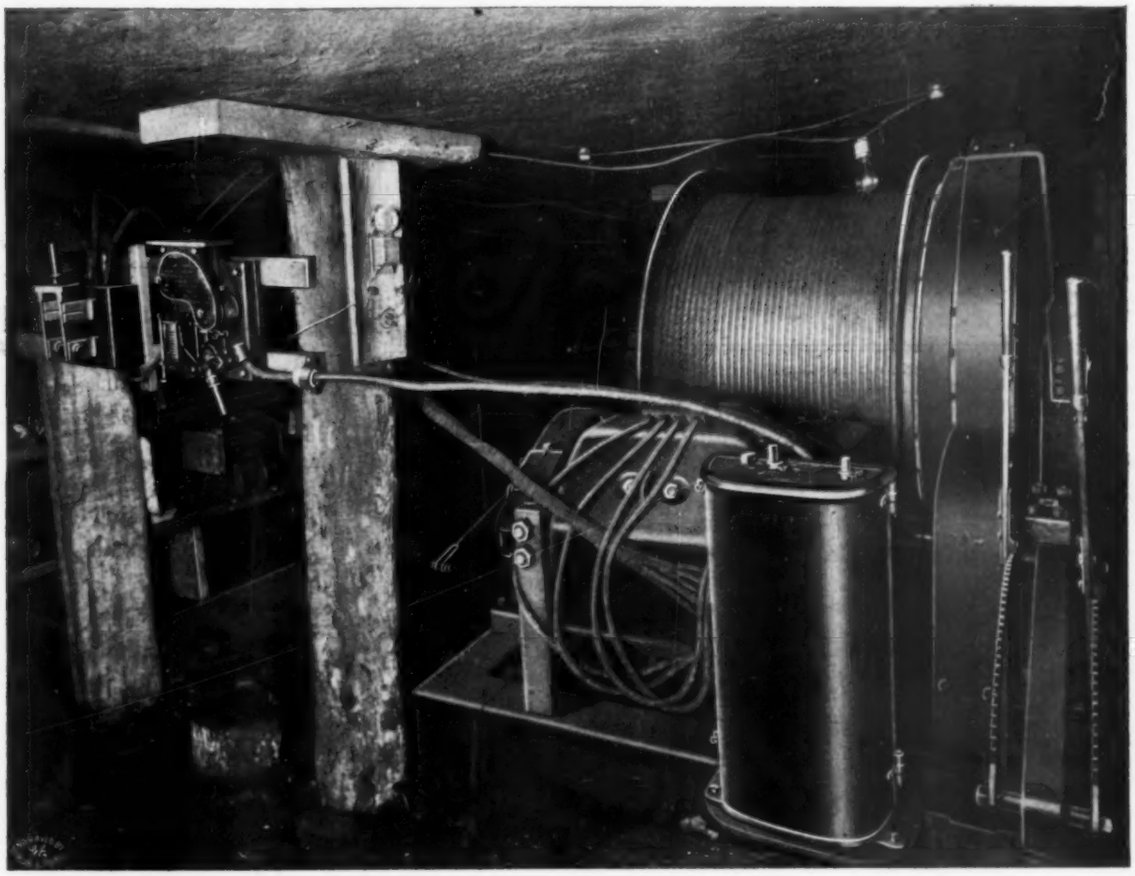
THE DEADLY "POM-POM" AND ITS ORIGIN.

The 1-pounder Maxim machine gun, more familiarly known as the "pom-pom," which was used with such deadly effect by the Boers in South Africa, is the first machine gun of caliber ever used in the field. By "machine gun of caliber" is meant a machine gun throwing an explosive shell, whose weight is just low enough to allow of the narrowest margin permissible by that clause in the St. Petersburg declaration of 1868, which enjoined that no explosive projectile less than fourteen ounces in weight would be tolerated in civilized warfare.

"SHOULD NOT LIKE TO MISS ONE."

"Popular Mechanics:—For the last four weeks two copies have come to my address each week which is evidently due to a mistake in the mailing list. In correcting this error please do not forget to leave me one each week, as it interests me very much and I should not like to miss one." Yours sincerely, Henry E. Gerrish, 4301 Park Blvd., Minneapolis, Minn.

Electric Hoists and Their Uses--Part III



ELECTRIC HOIST DEEP DOWN UNDER A COAL MINE.—Far beneath where the miners toil this powerful hoist is stationed. It is single friction drum hoist with direct current motors. This hoist is used by the Webster Coal and Coke Co., of Ehrenfield, Pa., and is made by the Lidgerwood Mfg. Co. It can hoist 4,000 pounds 500 feet per minute. The drum is 54 inches in diameter. This style of hoist is used for all general purposes. The friction drum is loose on the shaft and engages with the double-cone friction by a small end movement along the shaft by means of a screw, pin and cross-key. The band brake is of the regular differential type. The motor is of the armored type made by the General Electric Co. All moving parts are protected from dust and moisture by suitable casings. The gearing from the motor to the intermediate shaft is cut and is inclosed in an oil tight gear case. The controller is of special type and is mounted so as to be convenient to the operator. Each controller is provided with a reversing switch which can be used or not as desired. The friction and brake levers are mounted in a rack with notched quadrants and are fitted with thumb latches. These hoists are designed for use with a direct current of from 500 or 250 volts.

CONSOLIDATION AND PROSPERITY FOR RAILROADS.

The Conditions Are Better Today, Says John W. Gates, Than Ever Before in History.

By John W. Gates, the famed American speculator.

The railroad interests of this country are to go through a continual process of consolidation. Small lines will be absorbed by larger ones. The tendency of freight rates in the United States will within the next ten years be lower and the profits of the railroads, in my judgment, be even greater with the lower rates owing to the improvements in rolling stock and motive power, roadbed, the cutting out of curves and cutting down of grades, and increasing trainloads.

A railroad president told me that within four months he would be hauling 3,000 tons net of coal per trainload, where formerly—no more than five or six years ago—600 tons was considered a fair trainload on this same road, and this road at that time was in good physical condition. Only a few years ago every man of any prominence in the United States who was riding on a railroad pass felt as if he was entitled to it. This is being done away with more and more each year, and justly so. The standard of railroad men is being elevated; closer comparisons are being made; the cost of maintenance of road, rolling stock and maintenance of equipment is reduced; greater care is exercised in the purchasing and engineering departments.

Many men who twenty-five years ago were presidents or general managers of railroads would not today be considered sufficiently efficient to operate a logging road. The system of accounts has become a science and has been brought down to the finest possible point. Directors are not so reliant upon the operating men of their road, for the reason that they can make comparisons.

The amount of money paid out by railroad companies in rebates since the passage of the interstate commerce law in 1886 would, in my judgment, almost pay the national debt. What has made the railroads poor has been the carrying of people for nothing and cutting nominal tariffs actually in two in many instances.

The railroad situation in the United States today is better than ever in its history. While rates are low, they are adhered to. There is not one dollar paid out now in rebates, where two years ago there was perhaps $1,000 or $10,000. This accounts largely for the increased net earnings and the supposed decrease in cost of operation.

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This Issue 19,000 Copies

Following is the record of new yearly paid subscribers received by POPULAR MECHANICS during the past month:

WEEK ENDING NOVEMBER	15	.....	907
" " "	22	.....	929
" " "	29	.....	859
" " DECEMBER	6	.....	1,054
" " "	13	.....	477

Advertisers are invited to examine our books at any time. We tell the exact truth about our circulation and have nothing to cover up.

NOTICE TO SUBSCRIBERS.

Because our subscription list has so rapidly grown to cumbersome proportions, it has been necessary to change our former system of mailing, which was the same as is usually employed by weekly publications, to the advanced method now in use by the most widely circulated daily newspapers. Making the transfer from the stencil to the printed list was no small undertaking, as all the names had to be gone over and rearranged according to states and railroad routes. In this work there was some delay in recording the new names and it is quite probable that some of the new subscribers during the past two weeks have missed their paper. We shall be glad to send missing copies to any subscriber who will kindly advise us.

HOW TO MEASURE COAL IN A BIN OR BOX.

A solid cubic foot of anthracite coal weighs about 93 pounds. When broken for use it weighs about 54 pounds. Bituminous coal, when broken up for use, weighs about 50 pounds. The conseqent rule for the approximate measurement of coal in a bin or box is to multiply the length in feet by the height in feet, and again by the breath in feet, and this result by 54 for anthracite coal, or by 50 for bituminous coal. The result will equal the number of pounds; and to find the number of tons, divide by 2,000.

The new steamer Korea, of the Pacific Mail Company, has broken the record by making the passage from Japan in ten days, or 470 miles per day.

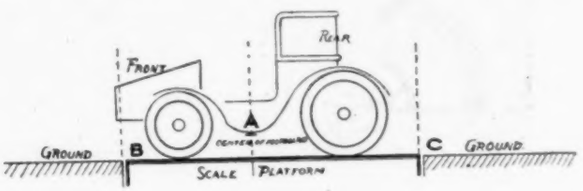
The managers of the Paris underground railway, in response to the appeals of dog owners, will add to their trains a special car for dogs accompanied by their attendants.

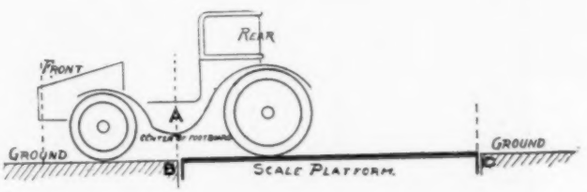
FITTING AN AUTO WITH PNEUMATIC TIRES.

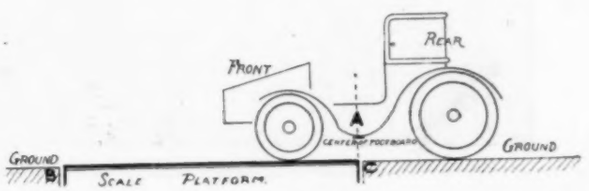
It is indispensable to know the weight of an automobile if the type of pneumatic tire is to be the proper one for the work to be done.

M. Michelin, in the Automobile Review, gives the following simple method of obtaining the necessary data. To weigh the automobile exactly it is only necessary to place it on an ordinary scale platform, the only provision being that it is long enough to contain the whole machine.

It is absolutely necessary that the car be weighed with all accessories, tanks filled with water and gasoline, seats occupied and all the baggage that will be carried at any time. In other







words, the maximum weight it will have to carry must be put on board.

Then proceed as follows: First—Weigh the whole of the machine as indicated in Fig. 1, it only being necessary to see that the entire length of the car is on the weighing platform.

Second—Weigh the rear of the car. To do this it must be placed so that the middle of the footboard overhangs the edge of the platform as in Fig. 2.

Third—Weigh the front similarly by allowing the center of the footboard to overhang the other end of the platform as in Fig. 3.

If the weights have been correctly taken, the figures obtained in operations two and three will when added together give within 23 pounds of the total weight obtained in the first operation.

MISS DEATH'S LIFE SAVED BY DR. DYE.

A few days ago a Miss Death was brought to the German Hospital to be operated upon for appendicitis. She was a daughter, she said of an undertaker. The surgeon's name who was chosen to perform the operation was Dye—Dr. Frank Hackett Dye. When the operation was over Miss Death, by Dr. Dye's directions, was placed in a private ward in charge of two nurses. Miss Payne is the day nurse; Miss Grone is the night nurse. The patient is recovering rapidly, and in a week or so Miss Death will bid good-by to Dr. Dye, Miss Payne and Miss Grone.

To remove tea stains soak them as soon as possible in milk. If the fabric be a non-washing one let the milk stain dry in and afterward remove it with benzine.

Elevator Drops From Tower 500 Feet High

Wonderful Test of Air Shaft--Descent From Point Higher than Any Building in the World

From the top of the city hall tower, Philadelphia, which is higher than any building in the world, an elevator car weighing 2,400 pounds was permitted to fall recently in order to test the efficiency of a newly invented air cushion. It is 500 feet from the pavement to the base of the statue of William Penn, which surmounts the tower. In the car was placed a lighted lantern, six rats, 50 incandescent light bulbs and several dozen raw eggs. The test, which is the most remarkable ever made, was witnessed by hundreds of Philadelphians and scientists from Europe and all parts of America. At a signal the rope suspending the car was cut. The fall is thus described in the Practical Engineer:

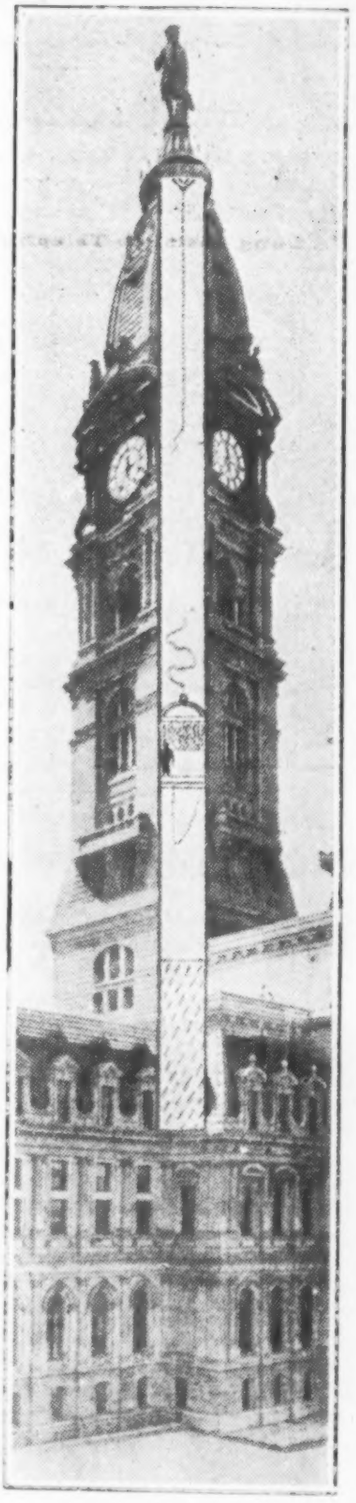
Elevator Air Cushion

"There was a hiss increasing in volume to a roar, then a bang and crash as of the breaking of a hundred window glasses as the car passed with frightful rapidity into the mouth of the air cushion. It seemed as if the tower walls were tumbling down. The bottom had been reached in less than two seconds—think of it over 400 feet drop—then there was a rush for the bottom by the spectators who were at the top of the shaft. The speed of the car had been so great that scarce a spectator but would have wagered a new hat against his vote for the machine candidate for governor that there wasn't a splinter of the car left larger than a lead pencil."

All were dumbfounded to find the car was not damaged a particle and the glass globes and the eggs were just as they had been placed, and the rats unharmed.

The shock of force of the fall had been deadened by the air cushion, known as the Ellithorpe. The compressed air was forced into the air-tight well at the bottom of the elevator shaft by the downward rush of the car, gradually reaching a degree of compression sufficient to check the fall of the car.

At 35 feet from the bottom the car fits tightly into the shaft, and the compression of the air beneath began in earnest. A valve with a strong spring lets out the surplus air in the bottom of the well, permitting the car to stop with a gentleness truly wonderful.


City Hall Tower, Philadelphia

WHO CAN ANSWER THIS?

Popular Mechanics. "I am using the hot water system for heating my house; am using the Vance boiler made in Geneva, N. Y. I have been experimenting in the effort to get some kind of a damper regulator that will open check when temperature reaches 150 to 160 degrees. I have found nothing yet that works very satisfactorily. Sometime ago I saw an illustrated article showing arrangement for regulating a damper; two different strips of metal being riveted together and exposed to heat of pipes as the temperature increased. This caused the strips to buckle, thereby imparting motion. I have forgotten what two kinds of metal were used in this regulation. Does any reader of Popular Mechanics know of any inexpensive device whereby I could get a motion of ½ to ¾ inch while temperature of water is rising from 150 to 160 degrees? I like your paper very much; could not be without it. F. H. Skinner,

Menands, Albany county, N. Y.

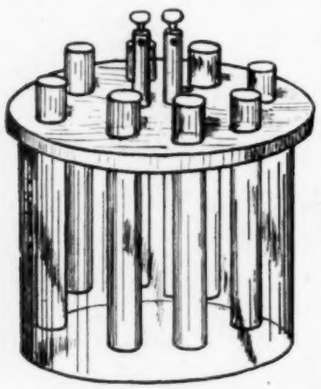
It is reported in the bazaars of Calcutta that Lord Curzon, viceroy of India, has during recent archaeological researches found the throne of King Solomon, and that he is to sit on this throne during the coming coronation durbar.

Easy Electrical Experiments

By L. P. Dickinson

HOW TO DO ELECTRO PLATING AT HOME.—II.

If the reader has attempted to do copper plating according to the directions given in the last chapter, he has at least gained an idea as to the methods employed to obtain a good deposit of any metal. The solution described will not work satisfactorily upon articles made of zinc or iron. For these metals, a solution of cyanide of copper is necessary, but the writer has refrained from describing this solution because it is composed of one of the most deadly poisons known. Those who desire to learn of this solution are referred to any of the numerous good works on the subject.



Home Made Battery.

Nickel plating will have more attraction for most readers, and the method of securing good results with this metal will now be described. The salt of nickel, with which the best results can be secured, is the double sulphate of nickel and ammonium. This salt is commonly used by nickel platers, and there should be no difficulty in procuring it. Dealers in plater's supplies also supply plates of nickel, one of which should be secured about 3 inches square and ¼ inch thick.

The solution is easily made up by dissolving ¾ pound of the double sulphate to one gallon of water. The water should be quite hot in making up the solution, but should not be used until cold. A tablespoonful of ammonia should be added before starting to work the solution, and every now and then, while working, a small quantity of ammonia, say ½ teaspoonful, should be added.

The articles to be plated should be cleaned and polished as before described and dipped in a cleansing solution just before immersion in the plating bath. If of copper, German silver, brass or iron, the article should be dipped in the pickling solution described in the last chapter. If made of tin, lead or pewter, a cleansing solution made by dissolving ¼ pound of potash (bought at any grocer's) in one quart of water. This solution should not be allowed to touch the fingers or the clothing.

For battery power, we need something more powerful than the two Gravity cells described in the last chapter. Four Gravity cells will give electromotive force enough, but the current will be so small that the deposits will be extremely slow. Two or three Bunsen or Bichromate batteries should preferably be used, joined in series. Nickel plating requires much more power than copper plating, and rather large cells should be used.

Let us sum up, then, the process of nickel plating: Smooth and polish the articles with fine emery paper or crocus paper for a finishing touch, hang them by a small copper wire in one of the two cleansing solutions already described, rinse them in clear water, without allowing them to touch the fingers or other bodies and hang them from the proper terminal of the plating bath, in the solution of nickel and ammonium which has been described.

The piece of nickel three inches square, already mentioned, is hung from the other pole of the plating bath, in place of the copper plate used for copper plating. It should be hung up by one corner, by a copper wire, but this wire must not dip into the solution. The article to be plated should be kept in motion, and if there are projecting parts upon it, these should not be too near the nickel plate. Failure to observe these precautions may result in a "burned" deposit.

Whatever battery is used, care must be taken to connect the article to be plated to the zinc pole of the battery, the square piece of nickel being hung from the rod connecting with the other pole.

The author recently constructed a cell which appeared to give excellent results for this line of work. Procure about a dozen electric light carbons about eight inches long, and three zinc rods. Procure a glass jar about six inches deep and six inches in diameter. Having removed all copper from the carbons, arrange them in a circle which will just fit the jar, thrusting them through a piece of pine board ½ inch thick. In the center of the board mount the three zinc rods. A wire twisted around the carbon rods forms one pole of the battery. Another wire connecting with the three zinc rods forms the other pole. For a solution dissolve ½ pound of potash in two quarts of water.

Two of these cells in series ought to give excellent results.

In our next paper we shall study the matter of nickel plating further, and also take up silver plating.

Part III will appear Jan. 10.

HE AIN'T WENT YIT.

By S. E. Kiser.

Every little while they tell us that the horse has got to go;
First the trolley was invented, 'cause the horses went so slow,
And they told us that we'd better not keep raisin' colts no more;
When the street cars got to moting that the horses pulled before
I thought it was all over for old Fan and Doll and Kit,
S'posed the horse was up and done for,
But
he
ain't
went
yit.

When the bike craze first got started people told us right away,
As you probably remember, that the horse had saw his day,
People put away their buggies, and went kitin' round on wheels;
There were lots and lots of horses didn't even earn their meals.
I used to stand and watch 'em, with their bloomers as they'd flit,
And I though the horse was goin',
But
he
ain't
went
yit.

Then they got the horseless carriage, and they said the horse was done,
And the story's been repeated twenty times by Edison;
Every time he gets another of his batteries to go,
He comes whoopin' out to tell us that the horse don't stand a show,
And you'll think to see these chauffeurs, as they go a chauffin', it
Was good-by to Mr. Dobbin,
But
he
ain't
went
yit.

When the people git to flyin' in the air, I s'pose they'll say,
As we long have been a-sayin', that the horse has had his day.
And I s'pose that some old feller jist about like me'll stand
Where it's safe and watch the horse haulin' stuff across the land.
And he'll mebby think as I do, while the clouds above him flit,
"Oh, they say the horse is done for,
But
he
ain't
went
yit."

It has been estimated that man in the Somme Valley and in other parts of France and in southern England made good stone implements fully 100,000 years ago.

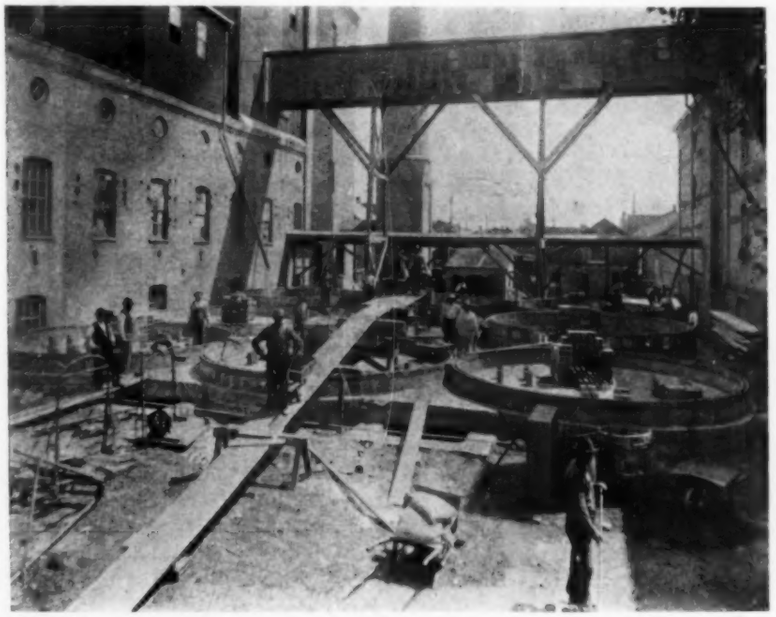
NEW NORWEGIAN LIFEBOAT.

Bereft Captain Invents Device to Withstand Any Storm.

Capt. Doenvig of Norway, who was bereft of his family by a storm and shipwreck off the coast of Virginia some years ago, has invented a lifeboat which, it is said, will safely carry its load through the fiercest storm that ever blew. The lifeboat, or buoy, is round and a little flattened at the bottom. It is made of solid sheet iron. Its diameter is 8 feet and the height 6½ feet. The buoy has a double bottom and draws 2½ feet of water when loaded. It is entered through three water-tight trap doors. Under the deck, located about one foot below the water line, are placed four galvanized tanks with a capacity for holding about 140 gallons of fresh water. Provision is made for a funnel to supply fresh air. The buoy is equipped with oars, a keel and rudder.

UNIQUE ELEVATOR AT APPLETON, WIS.

A unique specimen of the new fireproof tile elevator, which is now attracting much attention, is the one being built by the Appleton Brewing & Malting Co., at Appleton, Wis. An idea of the construction may be obtained from the accompanying illustration. The tanks, which were built by the Barnett & Record Co., have contact sides, thus giving an intermediate bin. The tanks have a capacity of about 30,000 bushels each and the intermediate spaces about one-fourth of the circular bins.



Tanks with Contact Sides

RUSSIAN MEAT FOR LONDON.

In a recent review of British trade, the London Daily Mail states that the Russian Agricultural Department is reported to be making arrangements to play an important part in supplying the London markets with beef, in opposition to the American meat exporters. It says special steamers have been built with freezing chambers, the Russian government assisting by subsidies, and that it is intended they shall ply between a Russian port, via the Kiel Canal, and London, with huge cargoes of fresh meat. Libau is considered a suitable port, as from there the beef can reach London in three days or less after slaughtering.

FEEDING A MAMMOTH PYTHON.

World's Largest Snake Made to Take Food by Mechanical Process.

Feeding the great pythons at the New York zoo has to be done by purely mechanical process. After being removed from their cage of glass and iron bars the food is forced down the reptiles with a long iron bar which is rammed far down into their throats. The snakes since they have been brought to the zoo absolutely refuse to take a morsel of food of their own volition and so this mechanical method has to be resorted to to keep them alive, just as a furnace would have to be filled with coal to keep it from going out. The python shown in the illustration is said to be the largest snake in the world. It is 27 feet long and so violently does the snake struggle when taken from its cage that it generally takes a dozen strong men to hold and feed it. The python is fed once every two months. Its meal consists of guinea pigs, plucked chickens, and other animals. Often the reptile, by the violent motions of its tail, will hurl the men from one side of the room to the other.

Feeding the World's Largest Snake

On English railroads long distance runs without stops are common. On the London & Northwestern two remarkable records have been made. A special train run in connection with the trial trip of a new steamship recently went a distance of 299 miles, and the new Viceroy of Ireland was carried from London to Holyhead, a distance of 262 miles, without a stop in either instance.

The Massachusetts Highway commission are using automobiles while inspecting the highways of that state.

Wondrous Mechanism of the Clock

Man's Invention that Approaches Nearest the Vitalistic in Its Perfectness

No other device of man's invention so nearly approaches the mechanism of the human system as does the clock. Indeed we have often heard the beating of the heart compared to the clock's ticking. "I am all run down" and "the old clock is nearly run down" are expressions with which we are all familiar. "I will stop your clock" is a slang phrase used as a threat among the disciples of George Ade. The time piece is man's nearest approach to perpetual motion and it comes nearer displaying human intellect than any other mechanical device. It seems to occupy the same position with relation to the mechanical world as does man to the animal kingdom.

Clockmaking in the Sixteenth Century

As there is no man who is perfect, so there is not a perfect clock in the world; not a clock in the world that keeps perfect time. Every time piece has to be regulated at certain intervals. No two clock pendulums swing in harmony. Go into a room where there is a great number of clocks; start all the pendulums to swinging together and you will soon note that they lose their uniformity of motion.

Clocks are governed by other clocks just as men are governed by other men. Every clock and watch in a city is regulated by one certain clock in that city. This might be called the "mayor" clock. It is usually the big self-winding clock in the office of the Western Union Telegraph company. This clock is connected with all the other self-winding clocks in the city by electric wires and it automatically regulates all of them every hour. From these clocks all the other clocks in the town—the clocks on the steeples and towers, those peeping at the passer-by from walls of buildings, from show windows, and from numerous other places and the watches in men's pockets, are regulated.

But this "mayor" clock in turn is governed by another still more important clock. It is called the master clock and it presides over a large district including many towns and villages. This might be called the "governor clock." There is one of them located in the general western offices of the Western Union Tlegraph Co., in Chicago. It has an electric wire running direct to a pole on top of the Masonic Temple and from this pole it automatically drops a time ball exactly at 12 o'clock, noon, each day. This time ball is a means of furnishing ships, and other craft on the lake with the correct time. Simultaneously with the descent of the time ball the time is flashed to all the "mayor" clocks within the master clock's jurisdiction. These master clocks are located at Chicago, New York, Washington, Buffalo, Pittsburg, Milwaukee, Minneapolis, Omaha, Denver, St. Louis, San Francisco and Portland, Ore.

The supreme clock of the United States, the great regulator of all American time pieces is located at Washington. It is the "president" clock. All "governor" clocks, all "mayor" clocks and all other kinds of time pieces in America are directly or indirectly under its supervision. It is a radiating point for wires to all master clocks and furnishes them the correct time at exactly 12 o'clock every day. This clock also automatically dislodges the famous Wahington time ball which falls at noon.

Of course the system is so arranged as to not interfere with the different time of the different sections of the United States. The ball at Washington drops at 12 o'clock Eastern time; the signal from the "president" clock is received at San Francisco at 9 o'clock A. M. Pacific time; Denver at 10 o'clock A. M. Mountain time and Chicago at 11 o'clock A. M. Central time. The master clocks at these places in turn regulate the other time pieces in their district accordingly.

But even this "supreme" clock at Washington is not perfect though it is as nearly so as is possible for ingenuity of man to devise. For its time it must look to a clock not made of earthly hands and beyond the control of man. Here we find the first perfect time recorder in the entire system of time measurement. This "clock" never fails. It is the Almighty clock of the universe. It controls the movement of the earth, moon and stars. Thus the time at Washington is obtained from observation of the heavens and is flashed to the subordinate clocks in all parts of America almost instantaneously.

Such is the way that we get our time which regulates our work hours; tells us when it is noon; measures the days, weeks, months and years. We can scarcely imagine what the world would be without clocks; how it would be possible for anyone to get along without them. Edison once said that he never knew or cared to know the time, but there are few people in Edison's fix.

The system of connecting clocks in all cities in the country with electric wires so that they are automatically regulated and made self-winding is one of the most important improvements ever made in the method of recording time, but the mechanism of the clock itself, is about the same as it has been for the past century. Late improvements have been in the way of economizing labor and doing the work by machinery. A factory can now make many more clocks in the same length of time than it could in former days, but it can't make better clocks. Indeed the slow process, as formerly employed, of making wheels, springs, screws and numerous other parts, would seem ridiculous to the clock maker of today. The accompanying illustration shows the interior of a clock factory in the 16th century, when nearly all the work was done by hand. But the clock turned out from this factory was quite of as good quality as the one made by the best equipped factory of the present time.

Nearly all the improvements in clocks seems to be in new shapes, methods of arranging the dial, figuring, etc. One new design entirely dispenses with the hands and the time is indicated by figures that are changed automatically every minute, on the principle of the registers in a street car. Some clocks record the hours from 1 to 24. There are cuckoo clocks, chiming clocks and many other different designs, but the inner makings are nearly all alike and about the same as they have been since the days that clocs were made by the method shown in the illustration.

MARCONI HAS A NEW RIVAL.

The steamer Vadamore, equipped with a wireless telegraph station, on its arrival at Baltimore the other day reported some remarkable experiments with the Murihead system. Messages were received at a distance of 1,000 miles at sea, but owing to the restricted power of the batteries operating the station on the vessel, the electrician on board was only able to transmit a message for a distance not exceeding 300 miles. The Morse alphabet is used in transmitting the messages, and the characters are recorded on a paper ribbon the same as a stock broker's ticker.

MAY RIVAL SOUTH AFRICA.

By William Allen White.

The chief topic of interest among mining men here at Boise, Idaho, is the development of that part of Thunder Mountain known as the Big Creek district, a belt lying west of the Thunder Mountain district proper and comprising a strip of ground 20 miles long and 5 miles wide.

Mining men believe that a camp has been found in this district which will rival the South African fields. Naturally in so large a district the country has not been thoroughly prospected, in fact, hardly scratched. The country will be closed by snow in a few weeks and prospectors will hardly have time to get in this year. But a big rush is looked for next spring.

ADVANTAGES OF BEING A DOG.

On the outskirts of St. Paul many years ago an old German kept a tavern. Occasionally he imbibed a little too much, and at such times he used to direct his conversation to the dog who was his most intimate friend. One day he was heard to remark:

"Vy dond you did someding, Snyder? I must all de time vork. If I tend de bar not, you haf somedings to eat, no. In de winter dime you lay mit de stove py, und I haf to vork. Und in de summer dime you lay by de voodpile und listen to de sunshine, vhile I haf to vork. All de dime I haf to vork. Und you vas nodding but a dog und vhen you die you is det, but vhen I die I haf to go to hell already yet."

MAKES SHELL VISIBLE TO THE GUNNER.

A novel device recently tried by the Navy department is the "tracer," which renders a shell visible during the night to the gunner but invisible to the person at the target, this being accomplished by the insertion of a burning composition in the base of the shell.

CULTIVATING RUBBER IN MEXICO.

New Field for the Production of the Valued Commodity Promises Well.

The growing scarcity of rubber and its increasing demand for the many commercial uses it now supplies has caused capitalists to seek new fields for its cultivation. It has been found to grow quite prolifically along the Isthmus of Tehauntepec and further south and several companies have already been formed to push the enterprise. It takes about ten years for a rubber tree to yield returns. The tree is then tapped (cut), as shown in the illustration, and the thick, gum-like sap is caught in a receptacle placed at the base of the tree and scraped from the tree with knives. The process is not unlike that of gathering the sap of a maple tree.

Rubber Tree, Showing Method of Tapping

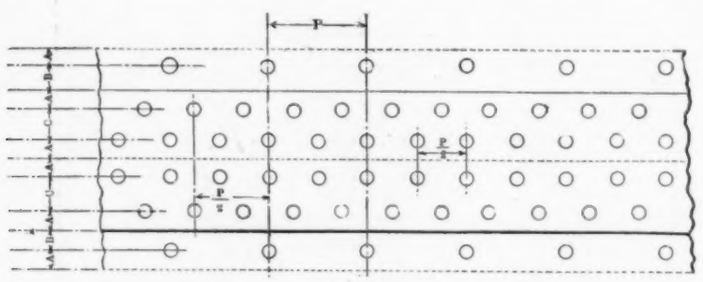
Tropical Truth, that handsome and interesting publication, devoted to the interests of Tropical America, says: "The cultivation of rubber in this section has a great future, but is not yet sufficiently developed to make regular returns in commercial quantities. After eight or ten years a plantation is supposed to be immensely profitable and will last for 40 or 50 years without replanting."

The United States sent $248,009,800 worth of goods to Germany last year and imported from Germany $91,820,000 worth.

SHOP NOTES

TABLE OF SEXTUPLE RIVETED SEAMS FOR LOCOMOTIVE BOILERS.

The accompanying diagram and table, in use in the drawing room of the mechanical engineer's department of the Lehigh Valley Railroad, will be found very convenient in laying out locomotive boilers. It saves a large amount of figuring, which is usually resorted to in order to obtain the right pitch of rivets in these seams, says the American Engineer.



Prefer that Original Diameter of Hole allow for 1/32 inch Reaming.

Plate	Rivet	A	B	C	D	E	Max Pitch P	Max Pitch Eff. %	Min. Pitch P	Min. Pitch Eff %
1/2"	7/8"	1 1/4"	1 1/8"	2 1/8"	7/16	1/2	7"	85.04	6 1/2"	85.11
9/16	1	1 3/8"	1 1/4"	2 3/8"	1/2	9/16	7 1/8"	84.93	6 7/8"	83.36
5/8	1 1/8	1 1/2	1 1/4	2 1/4"	1/2"	9/16	7 1/2"	82.99	7"	82.56
11/16	1 1/8	1 1/2	1 1/4	2 3/8"	9/16	5/8"	7 1/4	82.15	7 1/8"	81.73
3/4"	1 1/4	1 1/2	1 1/4	3"	5/8"	11/16"	7 1/2"	81.72	7 1/4"	82.38
13/16	1 1/4	1 1/2	1 1/4"	3"	11/16	3/4"	8"	81.55	7 3/8"	80.28
7/8"	1 1/4	1 1/2	1 1/4	3"	3/4	13/16	8"	80.00	7 1/2"	79.59

A. E.

Holes 1/16 inch Larger than Diameter of Rivet

The primary object was to get absolutely tight seams. In the thicker plates the efficiency of the seams has to a degree been subservient to tightness and the saving of weight has been carried as far as is consistent with good practice. The form in which this information is put speaks for itself, and it will be invaluable to the draftsman in making boiler drawings. Mr. Gaines, of the Lehigh Valley, informs us that this diagram was devised by Mr. W. H. Mussey when he was connected with the drawing room of that road.

RAISING A STACK.

I had the job to raise a stack 40 inches diameter and 90 feet long, writes a correspondent of the Wood Worker. As the work was done with nothing but a set of ¾-inch blocks and a barely sufficient amount of rope, the details may be of interest to others similarly situated.

The stack, with the wire guy lines attached and all swung clear of the ground, weighed 2,200 pounds, and had to be raised to the top of the boilers and breeching, at a point 15 feet from the ground level. This made a total height for the top of the stack of 105 feet.

The first thing to be done was to get a gin-pole for the stack, and as we were in the midst of a pine forest, it would seem an easy matter. But trees that will make good sawlogs will not make a gin-pole, for those that are straight enough are likely to be too heavy, so we were nearly a mile from the mill when we found a tree straight and slender and of the right height.

The length of the gin-pole needed for this particular job was 66 feet net. Taking half the length of the stack, 45 feet, and add 2 feet for the overbalance, makes 47 feet. To this must be added the height to the top of breeching, 15 feet, making 62 feet. To this add 4 feet for block and rope clearance, making a net length of 66 feet. This length will likely cause the cry of "two blocks" just before you are in position to slip the stack on the breeching, so it is best to add 4 feet as a factor of safety, making the pole 70 feet long. This we did, cutting the stick 70 feet from the straight end of the top, as far up among the limbs as was deemed prudent, leaving the heavy butt at the stump.

Next thing was to get a jack-pole to raise the gin-pole, and following the same line of calculating, it took 35 feet for half the pole, 2 feet for balancing, and 6 feet for clearance, making 43 feet for the jack-pole. This was easily obtained near the larger pole, and when the two were brought together it was a fair load for an ox team. But we were miles away from the camp of loggers and it would take two days to get a team; meantime work was waiting on that stack.

One of the mill "dollies," or rollers, was dragged out to the poles, and turning the dollie over, the two poles were lashed to it at a quarter of their length. With the tackle and 500 feet of line, long hitches were taken from tree to tree, and the two poles ridden into camp in three hours, over a space of a mile, up and down hill and around curves.

Arriving at the mill, it was the work of but two hours to get the poles up and the stack in place, when the raising was accomplished with a windlass made of a piece of one of the poles set between two trees, turned by handspikes, and in seven hours from the time the poles were cut a mile distant from the mill, the stack was up and the guys fastened. Be dead sure your guy ropes are long enough; if not, you are very apt to drop the stack before it is in place.

STRAIGHTENING UP A CARRIAGE POLE.

It may be interesting to know how to fix a buggy or carriage pole that has become warped or sagged down. I fixed one recently for a man who brought me his carriage and ordered the sagged pole taken out and replaced with a new one. It was a good pole but badly sagged, says J. W. Lambert in the American Blacksmith. I cut a piece of old buggy tire long enough to reach from the pole tip to the whiffletree bolt, and drilled two 9-32-inch holes at each end, six inches apart. I then clamped the iron to the under side of pole and marked the holes exactly. Next I bored ¼-inch holes from the under side and bored them as if the iron was ½ inch longer than it really was, putting a forked prop under the center of pole, and weighting the end sufficiently to spring the pole a little beyond the straight line; then I heated the iron along the center so as to expand it rather more than half an inch, and slid the iron between the forks which made a middle support for the same, clamped one end of the iron on to the bolts and fastened the other end in the same way. If the iron is a little too long you have to wait awhile. I then straightened the iron, which is apt to get a little crooked in heating and handling, by hammering lightly to the pole, after turning up the nuts at each end and releasing the clamps, I fastened the center part of the iron with 1x3-16 inch wagon nails, driving one in each tire bolt hole. The owner came for his hack and eyed it suspiciously, but after giving the pole an unappreciative kick and getting on it with his weight, he concluded there must be something in it. I charged him 50 cents for the job, and the pole never warped any more.

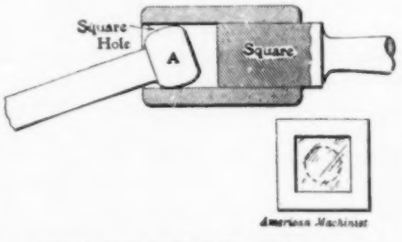
ELECTRICITY IN STEEL MAKING.

Up the sides of the blast furnaces, by an almost vertical incline, pass swiftly moving cars carrying the ore, coke and limestone in the exact proportions requisite for the production of iron. Electric motors hoist and dump the contents of these cars into the furnace top. Two thousand tons of material are poured into each furnace daily, says the Engineering Magazine, and yet a single man at the hoist represents the only human agency connected with the lifting, tipping and returning of the cars.

Each furnace is tapped every three hours, but the times are so arranged at the nine furnaces that every twenty minutes a train load of metal is hurried off to one of the two "mixers." These are large boxes of peculiar construction and exceptional strength, into which the metal from the various furnaces is poured from the metal cars, for the purpose of making a mixture uniform in quality. The pouring is accomplished by an electric motor tilting the car by means of a turning bar. The enormous tanks of liquid metal are also tilted by an electric motor and their contents poured into other cars standing below. With an envelope of heat overwhelming and stifling this second train of rocking, metal-splashing cars makes its way to the converter house, where the metal is refined into Bessemer steel. It is the work of a moment to couple the electric motor to the turning bar that tilts the car over, discharging its white-hot and liquid metal into the mouth of the converter which has been turned down to receive it. Then back swings the converter with a quickness wonderful for such a ponderous vessel.

SIMPLE UNIVERSAL JOINT.

A correspondent in the American Machinist writes: We required a universal joint at short notice for an experimental



A CHEAP AND SIMPLE UNIVERSAL JOINT.

machine. The sketch, sufficiently clear without further elaboration, shows how it was made. The end A was made a rather shaky fit. No machine work was done on it—simply filed up.

FROST-PROOF MORTAR.

Frost-proof mortar may be made by taking one barrel Portland cement, one barrel slaked lime, three barrels sharp sand; mix the whole dry, then add sufficient quantity of the carbonate of soda solution to make of proper consistency. The first setting should take place in one hour. After twelve hours good cement should have reached the final setting stage.

HINTS IN BUILDING AN AUTO.

In the Motor Age a correspondent who has tried building an automobile and doing most of the work himself says:

Do not start to make an automobile unless you have plenty of money. The better way is to buy a low priced machine, popular make. You doubtless figure that you will spend just a certain amount of money and that your labor costs you nothing, but you will be surprised to learn how quickly the money will leave you. Do not start unless you are a good mechanic, or can get the assistance of a good machinist. A man "handy" with tools does not answer the purpose at all. Do not try to make a cheap rig. Get the best there is of everything and buy nothing that has not been tested in every way.

When buying an engine do not buy one with so light a fly wheel that will not make at least 40 revolutions after the ignition is cut out. That is, if you start the engine and let it run at its ordinary speed, then let it draw in the full charge and cut out the ignition, it ought to run at least 40 revolutions before stopping. I have seen engines with the fly wheel inside of the crank case that would stop after missing only two or three explosions. Such engines are not, in my opinion, satisfactory. There will always be times when the engine will miss fire and that is the time you will need the heavy fly wheel.

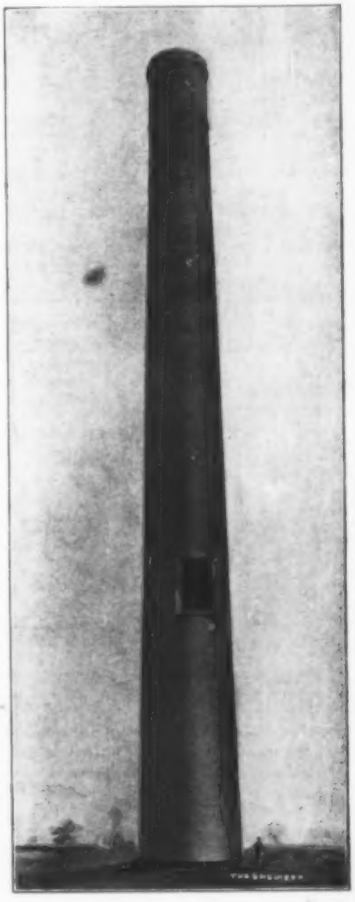
Do not believe that you can build an automobile that will "beat all the rest to pieces." Remember that there are manufacturers who have had years of experience behind them. My own rig would have been a complete failure had I not been a good mechanic with several years' experience in die and tool-making and three years' experience in a patent developing shop.

If you are willing to buy first class parts, suitable for the class of carriage you intend to build, you will no doubt eventually meet with success if the workmanship is first-class. Such parts may seem outrageously high in price to you, but if you start to make them you will learn that such is not the case.

LARGEST BRICK CHIMNEY IN PENNSYLVANIA.

The largest brick chimney in the big State of Pensylvania has just been finished at Philadelphia, and its immensity may be judged by the comparative size of the man seen in the engraving. The Engineer, an eminent authority on all matters pertaining to the generation of steam power, says:

The chimney is 275 feet high, 18 feet inside diameter at the top and 23 in diameter at the base, the outside diameter at the base being 29 feet, 4 inches. The chimny is built on the solid rock and of radial brick, hollow fire brick being employed in the lining. The weight of the structure is 2,375 tons in round numbers, the foundation alone weighing 900 tons, while the pressure per square foot on the rock upon which the foundation is built is 1½ tons. The chimney required 325,000 brick, 800 cubic yards of sand, 1,200 barrels of cement, and cost approximately



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$30,000. The capacity of the chimney corresponds to 50,000 horse-power.

The completion of the structure was celebrated by serving luncheon on the top of the chimney, 25 prominent persons availing themselves of the opportunity of enjoying the novel experience of lunching 275 feet from the ground, with a magnificent view of the city stretching out beneath them. The top of the chimney was reached by means of the elevator used for raising building material. The elevator had a capacity of but two persons, and although a rough affair it carried the passengers to the top with the dispatch of the most modern hydraulic equipment.

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ELECTRICAL COOK STOVE.

The Entire Meal Is Prepared on This Piece of Apparatus.

Small heaters for warming flat irons, boiling tea and for similar purposes are becoming quite common, and now we have a complete electric cook stove. The illustration shows one of these stoves which are being placed in new apartment houses

Electric Cook Stove

thus doing away with all smoke and smell of gas or coal. Each division of the stove has a separate heater which may be used without the others simply by turning a small switch. At the present price of electric current the cost of cooking by electricity is a little more than by gas or coal, but when the new system comes into more general use the price is expected to be reduced. The time will come when farmers will light their house, yard and barns, and do their cooking by electricity generated by wind mills and stored in storage batteries.

O! WHAT A ROAST!

A San Francisco subscriber to Popular Mechanics, after having read the article in the November 29th issue, entitled "The Eagle's Shadow on Canada's Soil," writes:

"The writer, a Canadian by birth, who has lived in the United States 40 years, has no fear that his countrymen will be led away by the sophistries that blind the citizen of the United States. Your freedom is but license; your government corrupt, municipal, state and National; your judiciary, the worst almost in the world, excepting only semi-barbaric nations like the Turk, Russian or Chinese, as compared to Great Britain; crime of all kinds is rampant; murders number more than 10,000 annually or 500 or more to one in the British empire; you burn human beings at the stake in the year 1902. A glorious result of triumphant democracy, truly! A democracy in name only. Truculence, bombast and egotism are national characteristics."

And he stood it 40 years!

MEDICATED THE MIND.

In his big fur coat and with mittens big as hams,
With his string of bells a-jingling, through the country-side he slams.
There are lots of calls to make, and he's always on the tear,
A-looming in his cutter like an amiable bear.

And it's hi-i-i, there!
Johnny, don't ye care,
Though 'tis aching something awful and is most too much to bear.
Just—be—gay!
As soon as it is day,
The pain will be a-flyin, for the doctor's on the way.

There are real, true saints; there are angels all around.
But there isn't one that's welcomer than he is, I'll be bound,
When he bustles in the bedroom and he dumps his boff'ler coat,
And sticks a glass thermometer a-down the suff'rin' throat.

And it's chirk, cheer up!
Mother, bring a cup!
You're going to like this bully when you take a little sup.
There—there—why,
There's a twinkle in your eye!
You'll be out again, to-morrow, bub, giddap, giddap, good-by!

—Holman F. Day.

MEANEST THING DEWEY EVER DID.

Admiral Dewey is known in the navy as an officer who always laid great stress on having his ship neat and trim. Some years ago, before he wore the stars of an admiral, his ship was in a foreign port. There was no wind to cool the air and the sun beat down until one could fry eggs on the guns. Dewey was strolling along the deck when suddenly he ordered the heaviest hoisting tackle in the ship to be got out of the hold without delay. Nobody knew what it was for, as there was nothing just at that time, either heavy or light, to be taken on board or sent ashore. After two hours' hard work the tackle was in place, and Dewey then ordered a small piece of tobacco which had been thrown under one of the guns, should be hoisted overboard and dumped into the sea.

No, it didn't happen again.

NEVER LOOK AT THE CLOCK.

Mr. Edison has often said that he never knew and never cared to know what the time was. He only believes in letting not a minute slip by, as that minute might yield an important invention. A friend of his once called on the inventor and presented his boy, asking for a word of advice and a motto the youth might adopt in his work. Edison was very busy with half a dozen engagements pressing. It was nearing the noon hour and the boy was noticed to frequently glance at the clock. Edison turned to him, grasped his hand and said: "Young man, the best advice I can give you is, never look at the clock."

The United States Fish commission, to prevent the extinction of lobsters in this country, distributed 81,000,000 young lobsters on the American coast last year.

"AN ARABIAN KNIGHT'S PIPE DREAM."

The Presto, a well known musical publication, under the caption of "An Arabian Knight's Pipe Organ," has committed the following, which it says comes from abroad:

One of the queerest musical instruments that was ever built was put up in Paris, in a house nearly as queer. Both were made at the instigation of Joris Karl Huysmans, a Frenchman, who has been called the greatest living literary sensualist.

The house was built to represent the bottom of the sea. Inside were all manner of strange seaweeds, mosses and grasses. The tinting of the walls was pale green, with the most delicate shades of browns and pinks. Outside all of the windows were great tanks of fish of nearly every known variety.

But inside the strange domicile that he has erected for himself there is nothing so in keeping with the sensualistic character of the man as his musical instrument. It is an immense pipe organ, every pipe of which was connected by one central tube, which could be held in his mouth as he played.

The organ was so constructed that each pipe was in communication with a butt of liquers, so that with each note he touched he was thrilled not alone by the sound but by a drop or two of the most choice wine. The beautiful strains of Mendelssohn's "Spring Song," or the "Lohengrin" wedding march meant to him a double harmony; for as the beautiful chords filled his sea house with melody he was receiving a dulcet minstrelsy of benedictine, charteuse, creme de menthe and many other equally epicurean drinks with each wizardlike touch of the white keys.

ALL HE WAS PAID FOR.

The leader of the band frowned as he brought the music to a standstill in the middle of a bar.

"Say, Pumpernickel," he demanded, in a loud whisper, "what do you mean by playing a lot of half notes where there should be whole?"

Pumpernickel took the horn off his neck.

"Vell," said he, "I made explanationings by you. You remember dot you cud down my vages to halluf, don'd you?"

The leader stared in amazement. He had done so, but—

"Und so I gontinuings to make der nodes out mid dis horn halluf nodes undil der vages was restoreded unto whole vages. Ain'd id, yes?"

Sometimes a comedian can produce a grave crisis.—Cincinnati Commercial Tribune.

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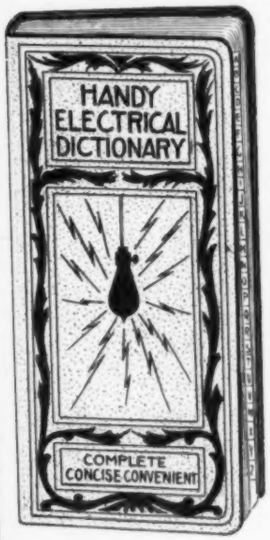

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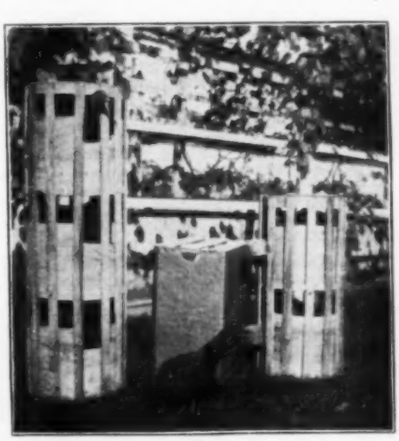

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